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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/579,922

07/25/2006

Ettore Colico

3687-169 (AMK)

9815

23117

7590

09/22/2011

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EXAMINER

NGUYEN, HUNG D

ART UNIT

PAPER NUMBER

3742

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DELIVERY MODE

09/22/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,922	Applicant(s) COLICO ET AL.	
	Examiner HUNG D. NGUYEN	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 12-23 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 12-23 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 25 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claim 21 is objected to because of the following informalities: the term “**2,35 j/cm²**” should be read as “**2.35 j/cm²**” for proper US English format. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 12 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al. (US Pat. 4,847,184) (cited by applicant) in view of Togari et al. (5,719,372) and Kwon (US Pat. 6,160,835) (both previously cited).**

4. Regarding claims 12 and 21, Taniguchi discloses a method for transferring images to a wooden support (19) by means of an apparatus provided with at least one source of a laser beam (15), means for focusing and moving the laser beam (16, 17 and 18) relative to the wooden support (19), as well as at least one adjustment unit (14) for the emission of said laser beam, the method comprising the steps of: at least one of acquiring and creating an image (11) to be transferred; converting information of the image (12 and 13) into instructions for adjusting emission, movement and focusing of the laser beam relative to said support (19); operating said moving and focusing means (16, 17 and 18) and said at least one adjustment unit (14) according to said instructions

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to reproduce said image on said wooden support (19). Taniguchi does not disclose adjusting the emission of said laser beam by directly varying operation of a modulator placed within a resonant cavity of said at least one source of a laser beam; locally subjecting said support to irradiation by means of said laser beam, with an energy per surface unit ranging from 0 j/cm^2 to 43.7 j/cm^2 , in order to blacken the surface portion of the support. Togari et al. discloses adjusting the emission of said laser beam by directly varying operation of a modulator (101) placed within a resonant cavity of said at least one source of a laser beam (Abstract; Col. 2 Lines 7-15). Kwon discloses locally subjecting said support to irradiation by means of said laser beam, with an energy per surface unit ranging from 0 j/cm^2 to 43.7 j/cm^2 , in order to blacken the surface portion of the support (Col. 3, Lines 45-50). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Taniguchi et al., adjusting the emission of said laser beam by directly varying operation of a modulator placed within a resonant cavity of said at least one source of a laser beam, as taught by Togari et al., for the purpose of controlling/adjusting the emission of the laser beam; locally subjecting said support to irradiation by means of said laser beam, with an energy per surface unit ranging from 0 j/cm^2 to 43.7 j/cm^2 , in order to blacken the surface portion of the support, as taught by Kwon, for the purpose of having a high quality output for marking on the material.

5. Regarding claim 22, Taniguchi et al. further discloses the wooden support is treated by means of additives for accelerating the carbonization and bleaching thereof, prior to the step of operating the moving and focusing means and at least one

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adjustment unit according to said instruction for reproducing said image on said wooden support (Col. 5, Lines 6-29).

6. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al. (US Pat. 4,847,184) in view of Togari et al. (5,719,372), Kwon (US Pat. 6,160,835) and further view of Connor (US Pub. 2005/0006357) (previously cited).

7. Regarding claims 13 and 15, Taniguchi/Togari/Kwon disclose substantially all features of the claimed invention as set forth above **except for** the image is in digital format; and the image is at least one of acquired and created in black and white or in shades of grey. Connor discloses the process for transferring a photo image to a medium where the scanner 40 (Fig. 1) converts a hardcopy image 30 (Fig. 1) into a digital format (Par. 17); and the process for transferring a photo image to a medium where the image is converts to a grayscale image (Par. 18). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Taniguchi/Togari/Kwon, the image is in digital format; and the image is at least one of acquired and created in black and white or in shades of grey, as taught by Connor, for the purpose of converting the image that is compatible with the laser system.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al. (US Pat. 4,847,184) in view of Togari et al. (5,719,372), Kwon (US Pat. 6,160,835), Connor (US Pub. 2005/0006357) and further view of Nims et al. (US Pub. 2002/0113829) (previously cited).

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9. Regarding claim 14, Taniguchi/Togari/Kwon/Connor disclose substantially all features of the claimed invention as set forth above **except** the image is in the bitmap, raster, or vectorial format. Nims discloses the image is in the raster format (Par. 35). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Taniguchi/Togari/Kwon/Connor, the image is in the bitmap, raster, or vectorial format, as taught by Nims, for the purpose of converting the image to a printable format.

10. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al. (US Pat. 4,847,184) in view of Togari et al. (5,719,372), Kwon (US Pat. 6,160,835) and further view of McIlvaine (US Pub. 2005/0083551) (previously cited).

11. Regarding claims 16 and 17, Taniguchi/Togari/Kwon disclose substantially all features of the claimed invention as set forth above **except** the image is an image of wood grains and the image of wood grains is obtained by means of random generation. McIlvaine discloses laminate flooring with custom image where the photographs are digitized, formatted, and enhanced to create digital images of wood grain that can be used on flooring planks and the wood grain are random (Par. 5). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Taniguchi/Togari/Kwon, the image is an image of wood grains and the image of wood grains is obtained by means of random generation, as taught by McIlvaine, for the purpose of reproducing the color and grain pattern of the particular wood.

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12. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al. (US Pat. 4,847,184) in view of Togari et al. (5,719,372), Kwon (US Pat. 6,160,835) and further view of Lang (US Pat. 4,315,379) (previously cited).

13. Regarding claim 18, Taniguchi/Togari/Kwon disclose substantially all features of the claimed invention as set forth above **except** the wooden support is selected from at least of pistol or carbine grips, rifle butts and forearms. Lang discloses the hand gun grip wherein the grip 12 (Fig. 1; Col. 1, Line 6-7) is made of wood. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in the Taniguchi/Togari/Kwon, the wooden support is selected from pistol grips, as taught by Lang, for the purpose decorating the wooden grips.

14. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al. (US Pat. 4,847,184) in view of Togari et al. (5,719,372), Kwon (US Pat. 6,160,835) and further view of Nosaka et al. (JP Pat. 2001205463) (previously cited).

15. Regarding claim 19, Taniguchi/Togari/Kwon disclose substantially all features of the claimed invention as set forth above **except** the laser beam to penetrate within the wooden support by a thickness ranging from 0.1 and 1 mm. Nosaka discloses the method of mark engraving on transmission belt where the mark 10 (Fig. 1) which depth is 0.1-1mm is engrave by a laser beam 21 (Fig. 2). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Taniguchi/Togari/Kwon, the laser beam to penetrate within the wooden support by a

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thickness ranging from 0.1 and 1 mm, as taught by Nosaka et al., for the purpose of engraving the mark deeply into the object.

16. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al. (US Pat. 4,847,184) in view of Connor (US Pub. 2005/0006357), Zhou et al. (6,624,883) (newly cited), Togari et al. (5,719,372) and Kwon (US Pat. 6,160,835).

17. Regarding claim 23, Taniguchi et al. discloses a method for transferring images to a wooden support (19) by an apparatus provided with at least one source of a laser beam (15), the method comprising the steps of: at least one acquiring and creating an image (11) to be transferred; converting information of the image (12 and 13) including the geometric instructions into instructions for adjusting emission, movement and focusing of the laser beam relative to said support (19); moving, focusing, and adjusting the emission of the laser beam (16, 17 and 18) according to said instructions to reproduce said image on said wooden support (19). Taniguchi et al. does not disclose editing the image to reduce noise or convert the image in shades of gray; identifying physical characteristics of the wooden support; determining geometric instructions for tracing a contour of entities reproduced in the image based on the physical characteristics; the adjusting step comprises: adjusting the emission of said laser beam by directly varying at least one of (1) pumping of active material and (2) varying operation of a modulator placed within a resonant cavity of said at least one source of a laser beam; and locally subjecting said support to irradiation by said laser beam, with an energy per surface unit ranging from 0 j/cm² to 43.7 j/cm², in order to blacken the

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surface portion of the support being subjected to said local irradiation. Connor discloses convert the image in shades of gray (Par. 18); determining geometric instructions for tracing a contour of entities reproduced in the image based on the physical characteristics (Par. 20-21). Zhou et al. discloses identifying physical characteristics of the wooden support (Col. 2, Line 66 to Col. 3, Line 16). Togari et al. discloses adjusting the emission of said laser beam by directly varying operation of a modulator (101) placed within a resonant cavity of said at least one source of a laser beam (Abstract; Col. 2 Lines 7-15). Kwon discloses locally subjecting said support to irradiation by means of said laser beam, with an energy per surface unit ranging from 0 j/cm^2 to 43.7 j/cm^2 , in order to blacken the surface portion of the support (Col. 3, Lines 45-50). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Taniguchi, editing the image to reduce noise or convert the image in shades of gray and determining geometric instructions for tracing a contour of entities reproduced in the image based on the physical characteristics, as taught by Connor, for the purpose of converting the image that is compatible with the laser system and transferring the image to the workpiece; identifying physical characteristics of the wooden support, as taught by Zhou et al., for the purpose of determining the grain orientation of a piece of wood; adjusting the emission of said laser beam by directly varying operation of a modulator placed within a resonant cavity of said at least one source of a laser beam, as taught by Togari et al., for the purpose of controlling/adjusting the emission of the laser beam; locally subjecting said support to irradiation by means of said laser beam, with an energy per surface unit ranging from 0

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j/cm² to 43.7 j/cm², in order to blacken the surface portion of the support, as taught by Kwon, for the purpose of having a high quality output for marking on the material.

Response to Arguments

18. Applicant's arguments filed 6/28/2011 have been fully considered but they are not persuasive. Applicant argued on page 5-6 of the Remarks that "Togari does not teach, however, that such a laser apparatus can be applied on a wooden support but only on an electronic component that has to be lined by a thermoplastic resin containing carbon to be vaporized by the laser beam. Furthermore, such a laser apparatus is applied to mark characters on an electronic component and not to transfer images in shades of gray to such support ... Kwon discloses different laser scanning devices (see "Background of the Invention") wherein the modulated output is accomplished by merely modulating the pump source (abstract and the entire description) and that operate at a pulse content from 0.01 to 1 joule/cm² (see col. 3, line 45-47, and col. 6, lines 28-29). Such laser scanning devices are not employed on wooden supports but are mainly applied onto a substrate of ceramics (col. 6, lines 37-40), having zirconia sintered surface (col. 4, lines 37-40), or onto a substrate of plastic (col.5, line 11), having an additive of Molybdenum disulfide (MoS₂) (col. 6, lines 40-44). This means that the pulse laser content from 0.01 to 1 j/cm² employed - in the particular examples disclosed in Kwon - for a substrate of ceramics and plastics cannot be automatically employed on a substrate of wood, as defined according to the claimed invention". The Examiner respectfully disagrees. As discussed in the Office action above, Taniguchi discloses a method for transferring images to a wooden support (19) by means of an apparatus

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provided with at least one source of a laser beam (15), means for focusing and moving the laser beam (16, 17 and 18) relative to the wooden support (19), as well as at least one adjustment unit (14) for the emission of said laser beam, the method comprising the steps of: at least one of acquiring and creating an image (11) to be transferred; converting information of the image (12 and 13) into instructions for adjusting emission, movement and focusing of the laser beam relative to said support (19); operating said moving and focusing means (16, 17 and 18) and said at least one adjustment unit (14) according to said instructions to reproduce said image on said wooden support (19). Taniguchi does not disclose adjusting the emission of said laser beam by directly varying operation of a modulator placed within a resonant cavity of said at least one source of a laser beam; locally subjecting said support to irradiation by means of said laser beam, with an energy per surface unit ranging from 0 j/cm^2 to 43.7 j/cm^2 , in order to blacken the surface portion of the support. Togari et al. discloses adjusting the emission of said laser beam by directly varying operation of a modulator (101) placed within a resonant cavity of said at least one source of a laser beam (Abstract; Col. 2 Lines 7-15). Kwon discloses locally subjecting said support to irradiation by means of said laser beam, with an energy per surface unit ranging from 0 j/cm^2 to 43.7 j/cm^2 , in order to blacken the surface portion of the support (Col. 3, Lines 45-50). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Taniguchi et al., adjusting the emission of said laser beam by directly varying operation of a modulator placed within a resonant cavity of said at least one source of a laser beam, as taught by Togari et al., for the purpose of controlling/adjusting the

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emission of the laser beam; locally subjecting said support to irradiation by means of said laser beam, with an energy per surface unit ranging from 0 j/cm² to 43.7 j/cm², in order to blacken the surface portion of the support, as taught by Kwon, for the purpose of having a high quality output for marking on the material. Togari et al. and Kwon reference is only used to teach the missing limitation such as, adjusting the emission of said laser beam by directly varying operation of a modulator placed within a resonant cavity of said at least one source of a laser beam; locally subjecting said support to irradiation by means of said laser beam, with an energy per surface unit ranging from 0 j/cm² to 43.7 j/cm², in order to blacken the surface portion of the support. Taniguchi, Togari et al. and Kwon are related to the same technical field; therefore, one ordinary skill in the art would combine these references.

19. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG D. NGUYEN whose telephone number is (571)270-7828. The examiner can normally be reached on Monday-Friday, 9AM-6PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571)272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HUNG D NGUYEN/
Examiner, Art Unit 3742
9/15/2011

/Henry Yuen/
Supervisory Patent Examiner, Art
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